

REDUCING ANIMAL-VEHICLE CRASHES

According to statistics posted on the DeerCrash Web site (www.deercrash.com), between 1994 and 2003, 1,472 fatal animal-vehicle crashes occurred in the United States. These crashes resulted in 2,978 human fatalities. The “top ten” states with fatal crashes over this 10-year period were Texas (133), Pennsylvania (69), Wisconsin (68), New York (51), California (50), Georgia (48), Michigan (47), Illinois (46), Missouri (46), and Oklahoma (45).

Assuming that these statistics can serve as proxies for National Park System units, managers of national parks in these states may be interested in the recommendations of researchers from Cornell University and Highway Safety North in Ithaca, New York. Researchers summarize published studies and other information from highway safety,

motor vehicle insurance, and natural resource sources. According to this study (Curtis and Hedlund 2005), which focuses on deer-vehicle crashes, such crashes are seasonal. Crashes involving white-tailed deer peak in October and November during breeding season; a secondary peak occurs in May and June as yearling deer disperse from their birth areas. Deer-vehicle crashes with mule deer are most frequent during the spring and fall migrations. Crashes occur predominantly in darkness, on high-speed, two-lane, rural roads, especially when forest cover is close to the road.

With respect to reducing crashes, the study reports “there is no quick, cheap method.” Control must be part of an overall strategy that balances the competing needs of humans and wildlife. In order to avoid attracting more deer and increasing the number of crashes, coordinated efforts between transportation, natural resource, and urban planning agencies are needed when preserving and creating green space and wildlife corridors.

Hence, data collection and reporting are crucial for defining the problem more precisely and evaluating control methods more accurately. In order to track totals, trends, and patterns, researchers recommend that crash reports include the type of animal involved and the precise location where the crash occurred. Managers should record this information using GIS or other methods in order to identify areas with high animal-vehicle crash frequencies. Collecting and using these data will help focus attention and funding on appropriate areas.

The paper by Curtis and Hedlund identifies three general strategies to reduce animal-vehicle crashes: modify driver behavior, modify deer behavior, or reduce the number of deer. Findings are organized into four categories (table 1): (1) effective methods with solid scientific evidence, (2) promising methods for which more information is needed, (3) methods with limited demonstrated effectiveness, and (4) methods that appear ineffective based on available evidence.

Regarding the information in table 1, fencing combined with underpasses and overpasses is the only method that is proven to be effective in reducing collisions. Unfortunately, this is also the most expensive method. Although more research is needed on the minimum area necessary for herd reduction to have a substantial effect, this method appears to be effective in decreasing the number of crashes in a specific area when a herd is substantially reduced. Because wildlife viewing is an important visitor activity in the National Park System, herd reduction would need to be part of an overall wildlife management program that balances the costs and benefits of maintaining wildlife populations. Some authors suggest that deer may be attracted to roadways by salt applied to melt ice in the winter and that other deicing substances should be used instead. However, no studies have investigated this

Table 1. Methods and efficacy of reducing animal-vehicle crashes

Effective methods with solid scientific evidence

Fencing combined with underpasses and overpasses

Promising methods for which more information is needed

Herd reduction

Temporary (posted only during migration periods) passive signs

At-grade crossings (with fencing and landscaping that directs deer* to crosswalks) combined with active signs (e.g., with flashing lights)

Methods with limited demonstrated effectiveness

Reflectors

Roadside lighting

Intercept feeding

Repellents

Methods that appear ineffective based on available evidence

General education

Passive signs

Lower speed limits

Deer whistles

Deer flagging

Source: Curtis and Hedlund (2005).

*Particularly promising for mule deer in western states.

issue. Finally, general education about animal-vehicle crashes is unlikely to be useful unless it provides information on very specific and time-sensitive situations, such as the beginning of mule deer migration across a short road segment. In these situations, either temporary passive or active signs may be more effective than general campaigns. In short, a general-information flyer handed out regularly with a park newspaper is probably not going to help reduce animal-vehicle crashes.

In addition to Curtis and Hedlund (2005), a few other sources are recommended reading for resource managers in areas with high animal-vehicle crash frequencies (see references). The DeerCrash Web site also contains an extensive bibliography that is updated periodically with summaries of information on specific crash avoidance methods.

References

- Curtis, P. D., and J. H. Hedlund. 2005. Reducing deer-vehicle crashes. Wildlife damage management fact sheet series, Cornell Cooperative Extension, Ithaca, New York.
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